

representing Garden Club of America); Harlan P. Kelsey (member of the Massachusetts Horticultural Society); Robert Pyle (chairman of Committee on Botanical Gardens and Arboretums, American Association of Nurserymen); John G. Bradley (clerk of the House Committee on the Library), executive secretary.

SEC. 2. (a) The duty of the Planning Committee (hereinafter referred to as the "Committee") shall be to make a careful study of the United States Botanic Garden (hereinafter referred to as the "Garden") in comparison with other botanic gardens, arboretums, herbariums, botanic libraries, and similar institutions, with a view to its improvement as a scientific, educational, and aesthetic establishment.

(b) It shall also be the duty of this Committee to study other Federal institutions having functions in common with the Garden, particularly the National Arboretum, the Smithsonian Institution, the Library of Congress, and the Department of Agriculture, with a view to correlating these common functions for the use and improvement of the Garden.

(c) The Committee shall make a report of its findings to the Joint Committee on the Library, together with recommendations for the future administration and conduct of the Garden.

SEC. 3. The chairman of the Committee, or any member thereof authorized by him, shall be empowered to examine the files, records, and inventory of various other Federal establishments pertinent to this investigation and for the purposes herein set out.

SEC. 4. The members of the Committee shall receive no salaries for their services, but necessary traveling expenses and other expenses incident to their duties shall be paid.

SEC. 5. For the purpose of carrying out the provisions of this Act the sum of \$5,000, or so much thereof as may be needed, is hereby authorized to be appropriated.

SEC. 6. No disbursements on this account shall be made for any purpose except on the authority and approval of the chairman of the aforesaid Committee.

ELECTIONS OF THE NATIONAL ACADEMY OF SCIENCES

At the meeting of the National Academy of Sciences held in Washington on April 23, 24 and 25, Dr. Thomas Hunt Morgan, director of the William G. Kerekhoff Laboratories of the Biological Sciences of the California Institute of Technology and past presi-

dent of the academy, was elected foreign secretary to succeed Dr. Robert A. Millikan, director of the Norman Bridge Laboratory of Physics and chairman of the Executive Council of the California Institute of Technology, who asked to be relieved of the office which he has held for the past fifteen years. Dr. Roger Adams, professor of organic chemistry at the University of Illinois, and Dr. H. S. Jennings, professor of zoology at the Johns Hopkins University, were elected members of the council.

Members elected were:

Vannevar Bush, professor of electrical engineering and vice-president of the Massachusetts Institute of Technology.
Herbert Spencer Gasser, professor of physiology, Cornell University Medical College, New York.
Edmund Newton Harvey, professor of physiology, Princeton University.
Dennis Robert Hoagland, professor of plant nutrition, University of California.
Ernest Orlando Lawrence, professor of physics, University of California.
James Flack Norris, director of the research laboratory of organic chemistry, Massachusetts Institute of Technology.
John Howard Northrop, biochemistry, member of the Rockefeller Institute.
Charles Palache, professor of mineralogy, Harvard University.
Thomas Milton Rivers, pathology, member of the Rockefeller Institute.
Edward Sapir, Sterling professor of anthropology and linguistics, Yale University.
Elvin Charles Stakman, plant pathologist, U. S. Department of Agriculture.
Harry Shultz Vandiver, associate professor of mathematics, University of Texas.
Norbert Wiener, professor of mathematics, Massachusetts Institute of Technology.
Sewall Wright, professor of zoology, University of Chicago.

Foreign associates elected were:

Dr. V. F. K. Bjerknes, professor of meteorology of the University of Oslo.
Dr. Robert Robinson, Waynflete professor of chemistry at the University of Oxford.

SCIENTIFIC NOTES AND NEWS

DR. WILLIAM HENRY WELCH, recognized leader of the medical sciences in the United States, professor emeritus of the history of medicine in the Johns Hopkins Medical School, previously professor of pathology, first dean of the school and director of the School of Hygiene and Public Health, died on April 30 in his eighty-fifth year.

ONE of the three gold medals of the National Insti-

tute of Social Sciences, New York City, has been awarded to Dr. Walter Bradford Cannon, George Higginson professor of physiology at the Harvard Medical School. The medal will be presented to Dr. Cannon by Dr. John A. Hartwell, director of the New York Academy of Medicine, at the annual dinner of the institute, which will be given on May 10.

THE doctorate of laws was conferred on Dr. Har-

rison E. Howe, editor of *Industrial and Engineering Chemistry*, at the Founder's Day exercises on March 13 of Southern College, Lakeland, Florida. Dr. Howe delivered the Founder's Day address.

THE University of St. Andrews will confer at the graduation ceremonial to be held on June 29 the honorary degree of LL.D. on Sir Frederick Gowland Hopkins, president of the Royal Society and professor of biochemistry at the University of Cambridge, and on Lord Moynihan, emeritus professor of surgery at the University of Leeds.

THE President of the French Republic has conferred La Croix de Chevalier de la Légion d'Honneur upon Sir Henry Wellcome, founder of the Wellcome Research Institution and head of Burroughs Wellcome and Company, London, manufacturers of fine chemicals.

PROFESSOR JAMES G. NEEDHAM, of Cornell University, was the guest of honor of the Cornell alumni of the University of Tennessee at a dinner given during a recent visit to the South. A hundred persons attended the banquet, at which Dr. Needham made the address.

At the first annual meeting of the enlarged American Institute of Nutrition, held at Cornell Medical Center, New York City, on March 28, a constitution was adopted and the following officers were elected for 1934-35: *President*, John R. Murlin; *Vice-president*, Eugene F. DuBois; *Treasurer*, Walter M. Boothby; *Secretary*, Icie G. Macy; *Members of the Council*, Roland M. Bethke, Agnes Fay Morgan and Arthur H. Smith.

THE first meeting of the newly organized New York City Branch of the Society of American Bacteriologists will be held at Teachers College, Columbia University, on May 8. The following officers will be installed: *Chairman*, Dr. L. W. Famulener, St. Luke's Hospital; *Vice-chairman*, Dr. Wm. Reiner-Deutsch, Doctor's Hospital; *Secretary-treasurer*, Dr. William W. Browne, College of the City of New York.

DR. WALTHER has been elected president, Dr. Siredey vice-president, Professor Achard general secretary, and Dr. Brouardel annual secretary, of the Paris Academy of Medicine.

At the annual meeting of the trustees of Science Service, which was held in Washington, D. C., on April 25, the retiring officers were reelected. They are Dr. J. McKeen Cattell, *president*; Dr. William H. Howell, *chairman* of the executive committee; H. L. Smithton, *treasurer*, and Watson Davis, *secretary* of the corporation and *director* of the service.

DR. CARL J. P. SKOTTSBERG, professor of botany at

the University of Upsala, has been appointed visiting professor of botany at Yale University. He will direct research on problems of the Pacific area.

PROFESSOR KARL PEARSON has been appointed Heath Clark lecturer at the University of London for the year 1934.

PROFESSOR FRANK W. GARRAN, of Dartmouth College, has been elected dean of the Thayer School of Civil Engineering to succeed Raymond R. Marsden, who is on leave of absence this year.

PROFESSOR MELVIN L. ENGER, a member of the faculty of the University of Illinois since 1907 and head of its department of theoretical and applied mechanics since 1926, has been appointed dean of the College of Engineering and director of the Engineering Experiment Station. Dr. Arthur Cutts Willard, who was recently elected president of the university, has been serving as acting dean of the College of Engineering this year. To fill the vacancy caused by the election to the deanship, Professor Fred B. Seely, a member of the faculty since 1909, has been named head of the department of theoretical and applied mechanics. Professor O. A. Leutwiler has been appointed head of the department of mechanical engineering.

DR. C. R. BURNHAM has been appointed assistant professor of genetics, and Dr. L. S. Bennett, instructor in agronomy and genetics, at West Virginia University.

DR. GEORGE OLDS COOPER, of the University of Wisconsin, has been appointed assistant professor of botany at Smith College.

T. G. HARBISON has been appointed curator of the Botanical Herbarium of the University of North Carolina. He will assume his new work on July 1. Mr. Harbison is known as a field botanist, having collected throughout the South for many years for the Arnold Arboretum and for the Biltmore Herbarium and Nurseries. For the past several months he has been assisting in arranging the Ashe Herbarium, recently acquired by the University of North Carolina.

PROFESSOR J. R. DYMOND, associate professor of systematic zoology at the University of Toronto, and assistant director of the Royal Ontario Museum of Zoology, has been appointed director of the museum, succeeding the late Professor B. A. Bensley.

AN expedition under the auspices of the department of tropical medicine of Harvard University sailed on April 25 for Africa. The expedition has as its objects the continuation of investigations carried on by Dr. Richard P. Strong in Guatemala upon the control and elimination of onchocerciasis, and the development of scientific and medical knowledge of the Katanga region. It is expected the party will be absent for about six months. The members of the expe-

dition are as follows: Dr. Richard P. Strong, director; Dr. Joseph C. Bequaert, entomologist; Dr. Jack H. Sandground, helminthologist; Henry E. Mallinckrodt, laboratory assistant and photographer; R. Stuyvesant Pierrepont, Jr., zoological assistant, and Byron L. Bennett, technician.

LIEUTENANT MARTIN LINDSAY and Lieutenant A. S. T. Godfrey left Copenhagen on April 10 for West Greenland, where they will join A. Croft in an attempt to make a sledge journey of 800 miles across the ice cap preparatory to exploring the mountain region north of Mount Forel in East Greenland.

ELEVEN fellowships in medicine, including two renewals, for study in the United States during 1934-35, were awarded at the spring meeting of the Medical Fellowship Board of the National Research Council, Washington, D. C., of which Dr. G. Carl Huber, dean of the Graduate School of the University of Michigan, is the chairman. The successful candidates were: Ralph W. Barris, Harold Blumberg, Dean A. Clark, Jack M. Curtis, Henry S. Dunning, Harry B. Friedgood, Benjamin F. Miller, Myron Prinzmetal, Henry G. Schwartz (renewal), Robert Tennant, William McC. Tuttle (renewal).

THE Thomas W. Salmon Memorial Committee of The New York Academy of Medicine has announced the choice of Dr. William Alanson White, superintendent of Saint Elizabeth's Hospital, Washington, D. C., as Thomas W. Salmon Memorial lecturer for 1935. Dr. White will deliver a series of three lectures on April 12, 19 and 26, 1935. His subjects will be "Psychiatry as a Medical Specialty," "The Social Significance of Psychiatry" and "The General Implications of Psychiatric Thought."

At a meeting in memory of Dr. Linsly Rudd Williams at the New York Academy of Medicine on April 26 addresses were delivered by Dr. Bernard Sachs, president of the academy; Dr. Livingston Farrand, president of Cornell University; Dr. John A. Hartwell, Dr. Williams's successor as director of the academy, and Dr. John H. Finley, of *The New York Times*.

DR. HENRY NORRIS RUSSELL, professor of astronomy in Princeton University, lectured at the University of Virginia on the Page-Barbour Foundation, established by the late Thomas Nelson Page, on May 1, 2 and 3.

PROFESSOR HUGH S. TAYLOR, of Princeton University, on April 27 addressed the Ohio State University Chapter of Sigma Xi and the Columbus Section of the American Chemical Society on "Heavy Hydrogen and its Use as a Research Tool."

DR. THOMAS M. RIVERS, of the Rockefeller Institute

for Medical Research, delivered the seventh lecture of the Harvey Society at the New York Academy of Medicine, on April 19. His subject was "Filtrable Viruses, with Particular Reference to Psittacosis."

DR. J. O. PERRINE, of the American Telephone and Telegraph Company, New York, addressed the Sigma Xi Club of Massachusetts State College on April 12 on "Researches in Speech, Music and Electricity."

DR. C. M. A. STINE, vice-president of E. I. du Pont de Nemours and Company, gave a lecture before the Franklin Institute, Philadelphia, on April 12, on "The Approach to Chemical Research Based on a Specific Example."

PROFESSOR E. K. RIDEAL, professor of colloid science in the University of Cambridge, will deliver the twenty-fourth annual May Lecture of the Institute of Metals on May 9, taking as his subject "Gases and Metal Surfaces."

IN 1933-34, for the third successive academic year, the exchange of lecturers between the departments of geology and geography at the University of Cincinnati and Northwestern University was maintained. In April Dr. John L. Rich, associate professor of geology at the University of Cincinnati, gave six lectures at Northwestern University. A similar series had been given at Cincinnati in March by Dr. Charles H. Behre, Jr., associate professor of geology at Northwestern University. Dr. Rich's lectures dealt mainly with petroleum geology and physiography, while Dr. Behre's dealt chiefly with ore deposits and structural control.

SECTION I (Psychology) of the American Association for the Advancement of Science is meeting jointly with the Western Psychological Association during the Pacific Coast meetings. The meetings are to be held on June 22 and 23 in Berkeley. Members of Section I and other psychologists are invited to attend. Correspondence concerning the meeting may be addressed to Dr. R. C. Tryon, secretary of the Western Psychological Association, University of California, or to Dr. John A. McGeech, University of Missouri, secretary of Section I.

THE fifth annual meeting of the American Association of Physical Anthropologists will be held at the American Museum of Natural History, New York, on May 8, 9 and 10. A joint session has been arranged with the American Society of Mammalogists, who are holding their yearly meeting at the same place. An invitation has been extended by the American Society of Mammalogists to join with them in their annual dinner. This will be held at the Hotel New Yorker, on May 10.

THE Eleventh National Exposition of Power and

Mechanical Engineering will be held in the Grand Central Palace from December 3 to December 8, inclusive, during the week that the American Society of Mechanical Engineers holds its annual meeting in New York.

THE national secretaries for the United States at the First International Congress of Anthropological and Ethnological Sciences, which will be held in London from July 30 to August 4, are Professor Wilton Marion Krogman, of Western Reserve University, for physical anthropology and Professor Melville J. Herskovits, of Northwestern University, for ethnology. Inquiries concerning the details of the congress may be addressed to them.

THE Annual Congress of the South-Eastern Union of Scientific Societies will be held at the University of Reading from July 11 to 14.

THE School of Medicine of George Washington University announces recent gifts for research projects

and other facilities as follows: from the Rockefeller Foundation \$2,198 for research in biochemistry; from Eli Lilly and Company \$1,200 for a fellowship for work on the chemistry of insulin; anonymous \$1,200 for special research on endocrinology, and from Mrs. Henry Alva Strong the sum of \$5,000 for additions to the Roentgen-ray department of the University Hospital.

AN Associated Press despatch reports that the Public Health Institute, to which the Rockefeller Foundation gave \$1,063,000 for construction and \$100,000 more for equipment, was inaugurated by Premier Mussolini in Rome on April 22. Present at the ceremony were Ambassador Breckinridge Long, of the United States, and Dr. Lewis Hackett, representative of the Rockefeller Foundation.

THROUGH an error it was stated in a recent issue that the degree of LL.D. was conferred by Stanford University on Dr. Angell and Dr. Whittaker, whereas it should have been the University of California.

DISCUSSION

TAXONOMY AS A FUNDAMENTAL FACTOR IN BOTANICAL RESEARCH¹

A TRIANGULATION survey starts with an accurately measured base line.

Two physicists working independently on the spectrum of a substance naturally first assure themselves that the material used in the two cases is the same.

A chemist attempts to corroborate the work of another but obtains a different result. The discrepancy is explained when it is shown that in one case the material used was pure, whereas in the other case it contained a slight admixture of a foreign substance.

In general, research workers in all branches of science must, in order to compare results, base comparable experiments upon a definite or accurate foundation.

Botanical research is no exception to this general principle. What is the rôle of taxonomy in botanical science and what is the relation of taxonomic botany to other branches of botany?

It is not claimed that taxonomic botany, the classification and naming of plants, is more important than physiology, anatomy or pathology, for example, only that it is equal with them.

Taxonomy has its own research problems, but here I shall discuss its relation to other branches of botany and shall attempt to show that it is fundamental or basic to these branches in the same sense that arithmetic is fundamental to algebra or to the calculus.

Research in most branches of botany depends for

its usefulness and application on the correct identification of the species of plants investigated. If experiments upon plants are to be repeated by a second worker for confirmation of results it is necessary that the species used should be the same in the two cases. Much confusion has resulted from inattention to this seemingly self-evident truth.

Let us examine a few illustrative examples.

A cytologist investigates the chromosomes of the taxonomically difficult genus *Rosa*. How easily may his results be vitiated through lack of care in identifying the species of *Rosa* with which he works!

Experiment stations try out different samples of economic plants obtained under the same name. Differences in results may sometimes be traced to errors in identification of the material used. The Bureau of Plant Industry often imports seeds which are distributed to experiment stations for trial. Before distribution great care is taken to see that the seeds are correctly identified, otherwise the results might be of little value. Again the seeds planted may not germinate, their place being taken by other seeds already in the soil. The identity of the plants in the plots should be verified.

The ecologist deals with plant associations and often wishes to compare the floras of similar regions. Lists of plants from floral areas that are to be compared have little value unless the species are correctly identified. Species of oaks or blackberries reported under the same name from the two areas may prove when examined by a taxonomist to be different species.

A species of sandbur (*Cenchrus distichophyllus*)

¹ Read before the Botanical Society of Washington, on February 6, 1934.